4. Garden

Program Name: Garden.java Input File: garden.dat

In his spare time, Farmer Bob manages a rectangular garden at the front of his house. Last year, Farmer Bob didn't get as many herbs as he would like, so he wants to enlist your help. He has a couple possible garden configurations he wants to try, and wants to know which one is best. He will need to fertilize each configuration. However, the only way he can do this is by taking his dump truck and dumping the fertilizer on a rectangular area. This dump truck can only back in from north of the field, so the dump truck width (DW) always applies to the X direction (across) and DH always applies to the Y direction. He only has one dump truck worth of fertilizer, so he wants to make as many plants grow as possible. Given a garden configuration and a dump truck rectangle, tell Farmer Bob the maximum number of plants he can fertilize.

Input

The first line of input will contain a single integer n that indicates the number of gardens to check.
For each garden, the input will be as follows.
The first line of each garden will contain four integers: W, H, DW, DH, which are the width and height of the garden, and the dump truck rectangle, respectively. The bounds on these numbers are $1 \leq W \leq 100$, $1 \leq H \leq 100$, $DW \leq W$, $DH \leq H$.
The next H lines contain W characters describing each row of the garden. Every spot in the row will either be a period (**.**) meaning there is nothing at that spot, or a capital S, representing a seed.

Output

For each garden, you will print on a single line the maximum number of plants Farmer Bob can fertilize with his dump truck.

Example Input File

```
2
3 2 2 2
S.S
.SS
7 5 3 4
SS..SSS
.S.S..S
.SS.S..
SSS.SS.
..S.S.S
```

Example Output to Screen

```
3
8
```